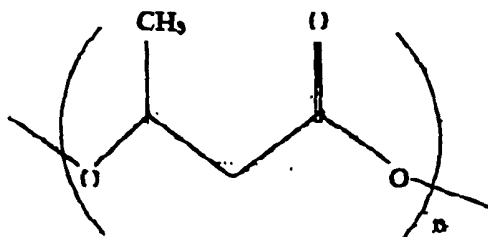


NF 223/01

## We claim

1. A process for the isolation of polyhydroxybutyrate of the formula 1



formula 1

- said process comprising growing a culture of *Bacillus mycoides* RLJ B-017 in a growth medium and a carbon source selected from sucrose, molasses and pineapple waste for a time period of equal to or greater than twenty four hours, said bacterial host producing intra-cellular polyhydroxybutyrate of the structure 1, lysing said bacterial host in said culture to release said polyhydroxybutyrate of the structure 1, and separating the isolate of said polyhydroxybutyrate of the structure 1.
2. A process as claimed in claim 1 wherein said growth medium comprises (g l<sup>-1</sup>): sucrose, 20; nutrient broth, 8; KH<sub>2</sub>PO<sub>4</sub>, 1.5; (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub>, 2.0; Na<sub>2</sub>HPO<sub>4</sub>·12H<sub>2</sub>O, 2.239; MgSO<sub>4</sub>·7H<sub>2</sub>O, 0.2; CaCl<sub>2</sub>·2H<sub>2</sub>O, 0.02; FeSO<sub>4</sub>·7H<sub>2</sub>O, 0.01; and trace-element solution 1 ml l<sup>-1</sup> said trace element solution comprising (g l<sup>-1</sup>): ZnSO<sub>4</sub>·7H<sub>2</sub>O, 0.2; H<sub>3</sub>BO<sub>3</sub>, 0.6; MnCl<sub>2</sub>·4H<sub>2</sub>O, 0.06; CoCl<sub>2</sub>·6H<sub>2</sub>O, 0.4; CuSO<sub>4</sub>·4H<sub>2</sub>O, 0.02; NaMoO<sub>4</sub>·2H<sub>2</sub>O, 0.06. with pH 7.2.
  3. A process as claimed in claim 1 wherein said growth medium comprises (g l<sup>-1</sup>): molasses, 20; nutrient broth, 8; KH<sub>2</sub>PO<sub>4</sub>, 1.5; (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub>, 2.0; Na<sub>2</sub>HPO<sub>4</sub>·12H<sub>2</sub>O, 2.239; MgSO<sub>4</sub>·7H<sub>2</sub>O, 0.2; CaCl<sub>2</sub>·2H<sub>2</sub>O, 0.02; FeSO<sub>4</sub>·7H<sub>2</sub>O, 0.01; and trace element solution 1 ml l<sup>-1</sup> said trace element solution comprising (g l<sup>-1</sup>): ZnSO<sub>4</sub>·7H<sub>2</sub>O, 0.2; H<sub>3</sub>BO<sub>3</sub>, 0.6; MnCl<sub>2</sub>·4H<sub>2</sub>O, 0.06; CoCl<sub>2</sub>·6H<sub>2</sub>O, 0.4; CuSO<sub>4</sub>·4H<sub>2</sub>O, 0.02; NaMoO<sub>4</sub>·2H<sub>2</sub>O, 0.06 with pH 7.2.
  4. A process as claimed in claim 1 wherein said growth medium comprises (g l<sup>-1</sup>): pineapple waste, 20; nutrient broth, 8; KH<sub>2</sub>PO<sub>4</sub>, 1.5; (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub>, 2.0; Na<sub>2</sub>HPO<sub>4</sub>·12H<sub>2</sub>O, 2.239; MgSO<sub>4</sub>·7H<sub>2</sub>O, 0.2; CaCl<sub>2</sub>·2H<sub>2</sub>O, 0.02; FeSO<sub>4</sub>·7H<sub>2</sub>O, 0.01; and trace-element solution 1 ml l<sup>-1</sup> said trace element solution comprising (g l<sup>-1</sup>): ZnSO<sub>4</sub>·7H<sub>2</sub>O, 0.2; H<sub>3</sub>BO<sub>3</sub>, 0.6; MnCl<sub>2</sub>·4H<sub>2</sub>O, 0.06; CoCl<sub>2</sub>·6H<sub>2</sub>O, 0.4; CuSO<sub>4</sub>·4H<sub>2</sub>O, 0.02; NaMoO<sub>4</sub>·2H<sub>2</sub>O, 0.06. with pH 7.2.
  5. A process as claimed in claim 1 wherein the polyhydroxybutyrate of formula 1 is separated from the culture of said organism and pelleted, the cell pellet thus

NF 223/01

obtained being treated with a ionic reagent comprising a dispersion of a metal hypochlorite in a halogenated hydrocarbon solvent, to agglomerate said poly-beta-hydroxybutyrate of the structure 1

6. A process as claimed in claim 5 wherein the metal hypochlorite is selected from sodium hypochlorite and calcium hypochlorite.
7. A process as claimed in claim 5 wherein the halogenated hydrocarbon solvent comprises chloroform.
8. A process as claimed in claim 5 wherein the concentration of said ionic reagent used is in the range of one molar to one millimolar.
9. A process as claimed in claim 1 wherein the polyhydroxybutyrate of formula 1 is separated from the organism culture by centrifugation to obtain three separate phases, wherein the lower phase containing polyhydroxybutyrate of the structure 1 is dissolved in chloroform and precipitated by adding ethanol.
10. A process as claimed in claim 9 wherein the precipitate is chilled and recovered by further centrifuging to obtain polyhydroxybutyrate of the structure 1.